CLAIMS

We claim:

1. An arrangement for multiplexing and/or demultiplexing optical signals having a plurality of wavelengths, the arrangement comprising:

- a multiplex body having first and second parallel surfaces between which light is reflected back and forth and coupled in or out in a wavelength-dependent manner, and
- means for coupling optical signals into or out of the multiplex body, the means including a plurality of essentially structurally identical subassemblies, each subassembly including an optoelectronic transducer and an associated optical system for respectively coupling light having a wavelength into or out of the multiplex body.

2. The arrangement as claimed in claim 1, wherein the optical system of the subassemblies is formed such that each subassembly provides an optical path comprising a parallel beam pencil.

3. The arrangement as claimed in claim 1, wherein each subassembly is mechanically connected to the multiplex body.

4. The arrangement as claimed in claim 1, further comprising means for providing an angular orientation of the optical path of each subassembly with respect to the second surface of the multiplex body.

5. The arrangement as claimed in claim 4, wherein the means for providing the angular orientation comprises spacers, each spacer being arranged between an associated subassembly and the second surface of the multiplex body.

6. The arrangement as claimed in claim 5, wherein each subassembly is assigned an eccentrically arranged spacer, which provides a tilted arrangement of the subassembly with respect to the second surface of the multiplex body such that optical signals of the optical path are coupled in or out obliquely with respect to the second surface of the multiplex body.

7. The arrangement as claimed in claim 5, wherein each spacer is premounted on its associated subassembly.

8. The arrangement as claimed in claim 5, wherein each spacer is formed as an integrated part of its associated subassembly.

9. The arrangement as claimed in claim 5, wherein a plurality of spacers are connected to one another with a defined spacing and form a placement part that is placed onto the second surface of the multiplex body.

10. The arrangement as claimed in claim 1, further comprising wavelength-selective filters, each wavelength-selective filter being assigned to an optical path and being provided on at least one of the first and second surfaces of the multiplex body, wherein each wavelength-selective filter is assigned to an associated subassembly.

11. The arrangement as claimed in claim 10, wherein the wavelength-selective filters are separate carrier parts arranged on the second surface of the multiplex body and between multiplex body and the associated subassembly.

12. The arrangement as claimed in claim 10, wherein the wavelength-selective filters and assigned subassemblies are arranged on the second surface of the multiplex body.

13. The arrangement as claimed in claim 12, wherein the first surface of the multiplex body is provided with a broadband reflection layer, which reflects all optical signal wavelengths.

14. The arrangement as claimed in claim 1, wherein each of the subassemblies includes a planar microlens formed on or in a substrate, the optoelectronic transducer being mounted on the rear side of the said microlens.

15. The arrangement as claimed in claim 1, wherein each of the subassemblies includes a monitor diode coupled to an optical transducer designed as a transmission component.

16. The arrangement as claimed in claim 1, wherein the optoelectronic transducer and the associated optical system of each subassembly are mounted on a leadframe.

17. The arrangement as claimed in claim 16, wherein the optoelectronic transducer, the associated optical system and the leadframe are at least partially encapsulated with a potting compound.

18. The arrangement as claimed in claim 1, wherein the optoelectronic transducers of each of the subassemblies are designed as a transmission component, and the subassemblies differ solely by the wavelength of the light emitted by the respective transmission component.

19. The arrangement as claimed in claim 1, wherein the optoelectronic transducers of each of the subassemblies are designed as a reception component and the subassemblies are completely structurally identical.

20. The arrangement as claimed in claim 1, further comprising a separate coupling assembly provided on the first surface of the multiplex body for the purpose of coupling in or out the superposed optical signals having a plurality of wavelengths.

21. The arrangement as claimed in claim 20, wherein the separate coupling assembly has a lens for focusing the parallel beam of the superposed optical signals onto the core of an optical waveguide that is to be coupled to the coupling assembly.

22. The arrangement as claimed in claim 20, wherein the separate coupling assembly has means for guiding and fixing an optical waveguide to the coupling assembly.

23. An optical multiplexing/demultiplexing arrangement comprising:

a monolithic transparent body having first and second parallel surfaces, each of the first and second surfaces being at least partially reflective;

a plurality of essentially structurally identical subassemblies mounted adjacent to the second surface of the monolithic transparent body, each of the subassemblies including an optoelectronic transducer and an associated optical system defining an associated optical axis; and

a plurality of wavelength-selective filters, each wavelength-selective filter being mounted between the second surface and a corresponding subassembly of the plurality of subassemblies,

wherein the associated optical axis of each subassembly is aligned at an oblique angle relative to the second surface.

24. An optical multiplexing/demultiplexing arrangement comprising:

a monolithic transparent body having first and second parallel surfaces, each of the first and second surfaces being at least partially reflective;

a coupling assembly mounted to the first surface of the monolithic transparent body, the coupling assembly defining a first optical axis aligned at an oblique angle relative to the first surface;

a plurality of essentially structurally identical subassemblies mounted adjacent to the second surface of the monolithic transparent body, each of the subassemblies including an optoelectronic transducer and an associated optical system defining an associated second optical axis that is aligned at the oblique angle relative to the second surface; and

a plurality of wavelength-selective filters, each wavelength-selective filter being mounted between the second surface and a corresponding subassembly of the plurality of subassemblies,

wherein the plurality of wavelength-selective filters are positioned along the second surface such that a light beam pencil directed along the first optical axis is reflected between the first and second surfaces to each of the plurality of wavelength-selective filters.